Comprehensive Respiratory Support: An online program created & validated by ISCCM & ICCM for people interested in learning the nuances of respiratory support.

Course	Duration	Platform	Interaction	Medium	Eligibility	Seats	Selection process	Fees	Exam Process	Privileges
FCRS	6months. 2 classes/week each class will be held for 30 mins. and 10 mins. of discussion, Q/A session. Total 24 sessions	Web based Live lectures	online	English	Post graduate doctors, including in training: Internal Medicine, Anesthesia, EM, Pulmonology. CTCCM candidates	100/batch. 2 batches/year	First serve		Online Theory MCQ based assessment	Fellowship Recognition of Respiratory support Provider. Can apply for FCRS if secured >75% marks

Course	Intent	Learning Objectives	Target population	Level of understanding	Level of training	What the delegates can expect from the course	What the delegates can perform post training	Expected participation from which sector?
FCRS	Detailed knowledge about the comprehensive care & support options & their application	Understanding of the principles. Details of the support. Components of care. Proper indications & applications	PG students: certain specialty PG doctors Healthcare sector teachers	Good understanding. Reasonable experience Familiarity with the subject Presently involved in care	PG/Experienced graduates/PD	Structured & detailed learning. Master certain devices. Apply & teach/demonstrates process, care & support. Ability to learn more	Independent care & support. Select & guide the proper choice/level of support. Perform compound support. Understand & explain the process care & components	PG students: specific specialty. PD students PG Doctors Experienced graduate doctors

Academic Team:

- Patron
- Course Advisory
- Course Director
- Course Facilitator
- Faculty: Core Knowledge Leaders. Allied Specialists
- Moderator: For individual sessions
- Selection board: Board of 3 members & Course Coordinators
- Trainers
- Invited international faculty
- Examiners: Theory. Practical
- Tech Experts
- Assigned Mentors

Patron:

R.C. Mishra & Deepak Govil

Course Director:

Arindam Kar

Chief Course Advisory:

Manish Munjal

Course Facilitation:

Rajesh Pandey & Babu Abraham

Industry support

- Experts
- International Faculty
- Materials
- Simulators
- Possible academic grant
- Remote Simulation Training

Industry Participation:

- Drager
- GE
- Hamilton
- Fisher & Paykel
- Medtronic
- Philips
- Mindray
- Resmed
- Pneumocare

Certification: ISCCM & ICCM

Virtual convocation

Exams:

Courses	Exam Eligibility	Theory	Platform	Medium	Dates	Pass marks	Practical	Eligibility	Format	Pass marks
FCRS	70% Attendance 70% pre-Test Scores	50 MCQ 35 A type 15 K type	online	English	Within 1 month of completion of course May be with Conference	70%	NA	NA	NA	NA

Application: online. Within the stipulated time period

Basic requirements: Eligibility. Web connection

Attachments: Proof of Credentials

Selection process: On first cum first serve

Final List: within seven days of last date of submission

Batches/year: 2 per/year for CCRS/DCRS. 1 per year for FCRS

Classes: online. 60 mins. 15 min Q&A.

Time: Every Tuesday 7 to 8 PM

Format:

- PPT (live/Recorded)
- Interactive sessions
- Expert view
- Q& A
- Case discussions
- Simulated excercise
- Live demo

Web requirements

- Basic
- Good connection
- Microsoft Office
- Zoom App

Academic support & Materials

- Guidance
- Guidelines
- Journal Links
- Learning sites link
- ISCCM own materials
- MCQ support
- Demo videos: links
- Designated Mentors: for fellowship course

Course Fees:

15000INR + GST. All inclusive of Examination Fees

First 100 applicants will be registered for the Inaugural Batch

Inauguration: Criticare 2022

Course Initiation: July 2022

Modules Outline:

	Applied Physiology	Applied Mechanics	Equipments & devices	Disposables	Gas supply & devices	Mechanistics	Knobology	Maintenance	Sterilisation
FCRS	detailed	detailed	detailed	detailed	detailed	Good knowledge	detailed	principles	outline

	Introduction	Basic Settings	Advanced Settings	Modes	Monitoring	Applied Pharmacology	Care & Support	Escalation	Weaning De=escalation	ECLS	Case scenarios
FCRS	Detailed	elaborate	Outline	Basic detailed Advanced: outline	Detailed Functional	Basic Functional	Proper knowledge & functionality	Knows when, why & what to	Detailed	Basic mention	varied

Modules:

Session 1	**Oxygen Stewardship and devices**	**Learning objectives**
30 mins	Assessing the need for oxygen therapy, oxygen stewardship	Students will be able to understand precautions and hazards of supplemental oxygen
30 mins	High flow and low flow devices	Students will be able to select delivery approach
Session 2	**Oxygen stewardship and devices**	**Learning objectives**
30 mins	Overview of Hyperbaric oxygen therapy and Carbogen therapy	Students will be given a basic idea on all the oxygen based therapy, indications, physiologic effects and hazards.
30 mins	Nitric oxide therapy, Helium-oxygen therapy, HFNO	At the end of session students will be well versed with all oxygen therapy devices and troubleshooting
Session 3	**Pulse oximetry, Etco2 monitoring, ABG machine**	**Learning objectives**
30 mins	Principle and working, calibration	Practical demonstration will be done, hands on training and will be able to calibrate and troubleshoot the devices
30 mins	Monitoring normal and abnormal values, understanding graphic representation	At the end of session students will be well versed with all the monitoring devices and troubleshooting devices, application in the ICU
Session 4	**Airway Management**	**Learning objectives**
30 mins	Open and closed suctioning, indications, proper suction pressure, to be well versed with all home and hospital suction devices	Students will be able to properly demonstrate suctioning

30 mins	Caring of endotracheal and tracheostomy tubes, downsizing of tracheostomy tube, capping, usage of speaking valve, decannulation	Students will be able to identify blockages, preventing tube blockage, inner cannula indication and insertion, downsize and decannulation
Session 5	**Airway Management**	**Learning objectives**
30 mins	Airway devices (OPA, NPA, supraglottic airway), indications and contraindications	Students will be able to identify and apply airway devices- practical demonstration
30 mins	Well versed with Endotracheal, Percutaneous tracheostomy, Cricothyroidotomy	Students will be able to learn about all the devices and their application
Session 6	**Introduction to Respiratory mechanics**	**Learning objectives**
30 mins	Lung volumes and capacities	Basic understanding and application
30 mins	Compliance and Resistance	Understanding of lung function and thereby managing patient on ventilator will become easier
Session 7	**Introduction to Respiratory mechanics**	**Learning objectives**
1 hour	Pressure and pressure gradients	Understanding of pressure changes in lung during inspiration and expiration
Session 8	**Introduction to Mechanical Ventilation**	**Learning objectives**
30 mins	Introduction to history of Ventilators	Will understand the history behind how the ventilators emerged
30 mins	Positive and Negative pressure ventilation, complications associated with mechanical ventilation as barotrauma, volutrauma	Will able to understand the major difference between both the pressures and how ventilators work, will be able to minimize risk associated with mechanical ventilation
Session 9	**Introduction to Mechanical Ventilation**	**Learning objectives**
1 hour	Phase variables	Understanding how trigger, limit and cycling works
Session 10	**Ventilator Graphics**	**Learning objectives**
30 mins	Scalars	Basic understanding and application

30 mins	Loops	Basic understanding and application
Session 11	**Introduction to Mechanical Ventilation**	**Learning objectives**
30 mins	Conventional and Non-conventional modes of ventilation, closed and open loop of ventilation understanding	Will get to understand the simple and advanced modes of ventilation and application
30 mins	Understanding the user interface of the ventilator and calibration	Students will be able to use and handle all basic ventilators available in the hospitals; will know how to calibrate the machine.
Session 12	**Ventilator Graphics**	**Learning objectives**
30 mins	Identifying common graphs on the ventilator (airway obstruction, auto-PEEP, leak, flow limitation, hysteresis, increased airway pressure)	Student will be demonstrated practically and they will be able to identify and troubleshoot.
Session 13	**Modes of Mechanical Ventilation**	**Learning objectives**
30 mins	Volume and Pressure control modes (VC, PC, AC, VC-AC, PC-AC)	Basic understanding of volume and pressure control modes and apply, case scenarios will be put and students will be able to practically set the particular required mode.
30 mins	Learning basic parameters settings	Students will be able to adjust basic settings
Session 14	**Modes of Mechanical Ventilation**	**Learning objectives**
30 mins	Learning weaning modes (SIMV, SIMV-VC, SIMV-PC, CPAP/PS)	Students will be able to demonstrate and set the weaning mode.
30 mins	Understanding of advanced modes of ventilation (PRVC, APRV)	Basic understanding and setting.
Session 15	**Weaning modes of Mechanical Ventilation**	**Learning objectives**
30 mins	Learning weaning modes (SIMV, SIMV-VC, SIMV-PC, CPAP/PS)	Students will be able to demonstrate and set the weaning mode.
30 mins	Understanding of advanced modes of ventilation (PRVC, APRV)	Basic understanding and setting.
Session 16	**Setting alarms**	**Learning objectives**

30 mins	Importance of alarms on mechanical ventilator and setting	Basic understanding of all the alarms, students will be able to set required higher and lower alarm limit
30 mins	Troubleshooting basic and common alarms in ICU (high PIP, low Mve, high RR, and disconnection)	Students will be able to troubleshoot basic alarms.
Session 17	**Weaning from mechanical ventilation**	**Learning objectives**
30 mins	Definition and understanding of easy and difficult weaning	Student will be well versed with weaning
30 mins	Understanding weaning criteria	Will be able to learn the strategies of weaning and apply practically
Session 18	**Weaning from mechanical ventilation**	**Learning objectives**
30 mins	Weaning methods, RSBI, VC, NIF	Students will be able to calculate and decide for weaning
30 mins	Monitoring during weaning	Students will be able to monitor during weaning and can take decision on continuation or discontinuing weaning
Session 19	**Extubation**	**Learning objectives**
30 mins	Extubation criteria	Students will be able to understand extubation procedure and criteria to be fulfilled
30 mins	Post extubation monitoring	Students will be able to monitor post extubation complications
Session 20	**Extubation**	**Learning objectives**
30 mins	Post extubation stridor management	Students will be able to identify and manage stridor

30 mins	Post extubation NIV application, Post extubation requirement of re-intubation, re-intubation preparation, difficult airway cart preparation	Students will be able to understand and apply NIV as electively or in emergency required, Students will be able to identify and monitor for re-intubation
Session 21	**Storage and Delivery of medical gases**	**Learning objectives**
30 mins	Thorough knowledge with all gas supply systems, understanding and using storage devices during transport	Students will be versed with compressed and liquefied gases, H and E cylinders
30 mins	High pressure reducing valves and low pressure gas flowmeters	Students will be able to understand, calculate and estimate duration of liquid oxygen cylinder gas flow
Session 22	**Applied Pharmacology**	**Learning objectives**
30 mins	Overview of airway pharmacology, adrenergic bronchodilators, mucolytics, inhaled corticosteroids	Students will be able to understand the airway pharmacology basics, indications and application
30 mins	Indications, dosage, nebulizer devices (SVN, LVN, MESH nebulizers), mechanism of action)	Students will be well versed with dosage of all nebulizers and how to administer through nebulizer devices
Session 23	**Applied Pharmacology**	**Learning objectives**
30 mins	Inhaled pulmonary vasodilators basic understanding (NO, Heliox therapy)	Students will be able to understand the indication and adverse effects of the therapy
30 mins	Antimicrobial therapy	Basic overview of antimicrobial inhaled drugs
Session 24	**Care and Support**	**Learning objectives**
30 mins	Caring of ventilator tubing, understanding HME mechanism and care of the circuit connection, Heated humidification and caring	Students will be able to care for the ventilatory circuit and manage during soiled filters or water condensating in the circuit, application of heated humidifier

30 mins	VAP bundle and VAE overview (VAC, IVAC and PVAP)	Students will be able to apply the bundles and manage infection practices in the individual ICU
Session 25	**Care and Support**	**Learning objectives**
30 mins	Mini BAL and Bronchoscopy understanding	Basic understanding of Bronchoscopy procedure will be able to assist and doing mini BAL
30 mins	Nutritional therapy basic, nutritional stewardship	Students will be able to calculate energy expenditure and indirect calorimetry
Session 26	**Care and Support**	**Learning objectives**
1 hour	ICU rehabilitation, homecare support overview	Students will be able to make home care plans
Session 27	**Disinfection and Sterilization**	**Learning objectives**
30 mins	Spaulding approach of disinfection and sterilization of patient care respiratory equipments	Students will be well versed with all disinfection and steam sterilization techniques
30 mins	Disposable equipments	Student will be able to understand respiratory devices how many days can be used when to disposed off
Session 28	**Disinfection and Sterilization**	**Learning objectives**
30 mins	Infection control practices, minimize ventilator associated events	Students will be able to minimize infection risk associated with mechanical ventilator and oxygen therapy devices
30 mins	Discussion on all respiratory care devices, disinfection and sterilization techniques in short, Q/A session	In the end of session students will be able to understand and well versed with all disinfection and sterilization techniques.
Session 29	**ECLS**	**Learning objectives**
30 mins	Basic mentioning of ECMO and ECCOR practices	Students will be able to understand basic indications and complications
30 mins	Respiratory support during ECMO	Students will be able to set ventilator support, mode of ventilation, weaning during ecmo, aerosol therapy
Session 30	**Long term ventilation strategy**	**Learning objectives**

30 mins	Long term acute care settings, ventilation strategy, tracheostomy care	Students will be able to learn acute long term patient care and ventilation strategies
30 mins	Airway management, nutrition and physiorehabilitation support	Students will be able to learn how to manage airway, secretion management, making physiotherapy and nutrition plan
Session 31	**Home Respiratory care support and transportation**	**Learning objectives**
30 mins	Making respiratory care plans including chest physiotherapy, postural drainage, tube care	Students will be able to prepare a proper care plan and managing home care patients on respiratory support
30 mins	Well versed with all home portable devices, connection, settings, monitoring, monitoring during transport on ventilator	Students will be able to manage and monitor patients on portable Bipap and transport ventilators during transportation
Session 32	**Non-Invasive ventilation**	**Learning objectives**
1 hour	Overview, indications and contraindications, NIV application	Students will be able to apply NIV when indicated and troubleshoot
Session 33	**Ethical and legal implications of practice**	**Learning objectives**
30 mins	Codes of ethics, legal issues affecting respiratory care	Students will be able to understand respiratory related codes of ethics
30 mins	Health care and change, DNI and DNR consent, discontinuation ventilator	Students will be able to understand the terms and legal implications
Session 34	**CASE SCENARIOS**	

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